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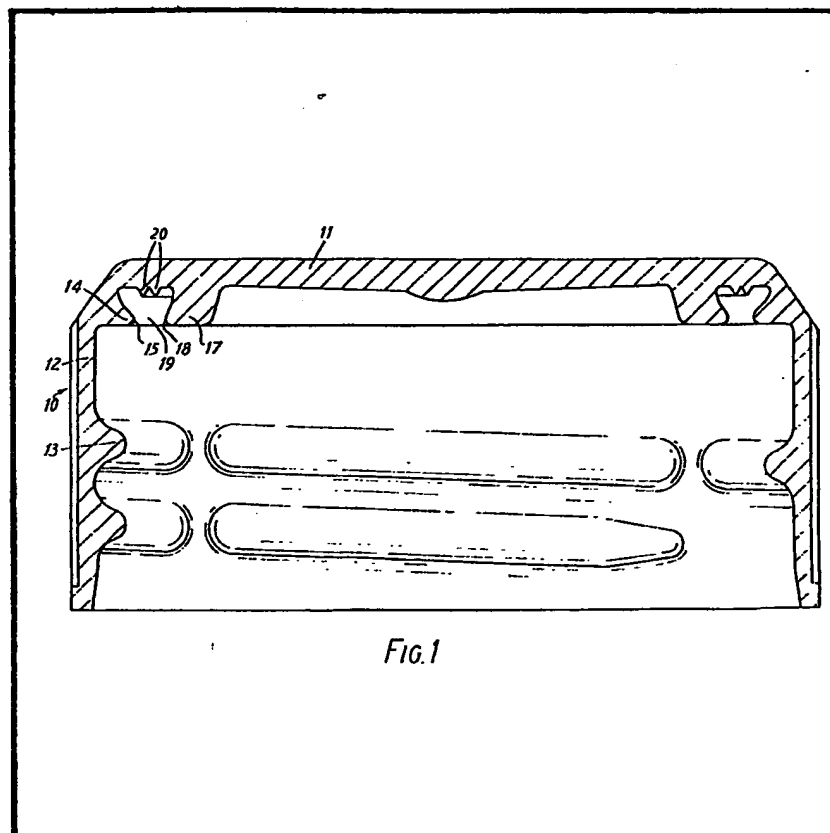
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(54) Improvements relating to  
closures

(57) A closure for application to the screw-threaded neck of a container is moulded in one piece from a resilient plastics material and has a top 11 with a dependent skirt 12 screw-threaded on its internal surface. Spaced below the top 11 the skirt has an inwardly projecting rib 14. An outwardly projecting rib 17 is

connected to the top 11 and forms with rib 14 a downwardly open channel for receiving the top portion of the neck of the container. Ribs 20 are formed on the underside of the top 11 and project downward into the channel to form a seal with the top edge of the neck. In a variant, rib 14 is replaced by two, undercut, triangular section ribs (25, 26, Fig. 2) and rib 17 has two similar ribs (28, 29) at the other side of the channel.



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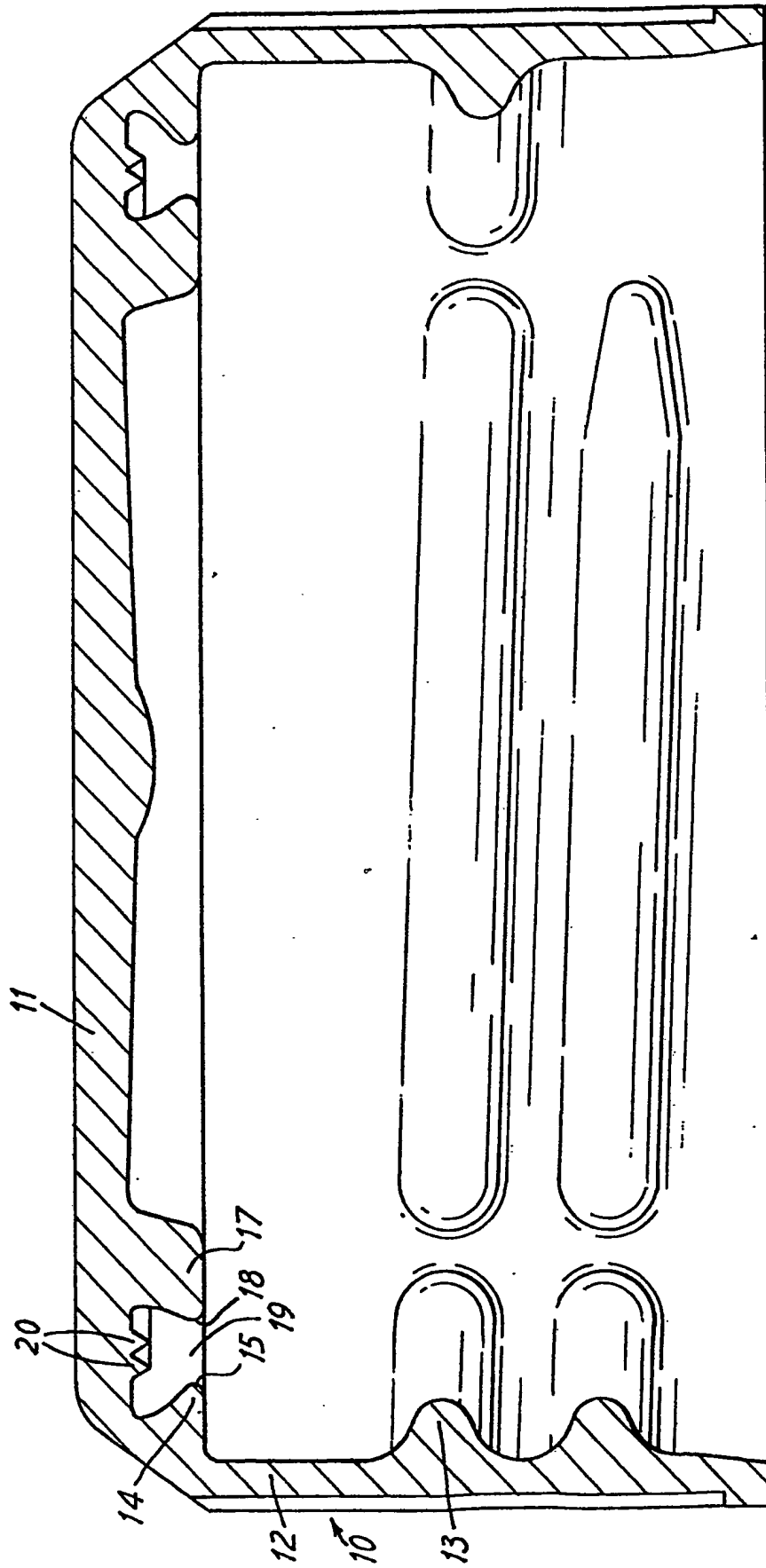


FIG. 1

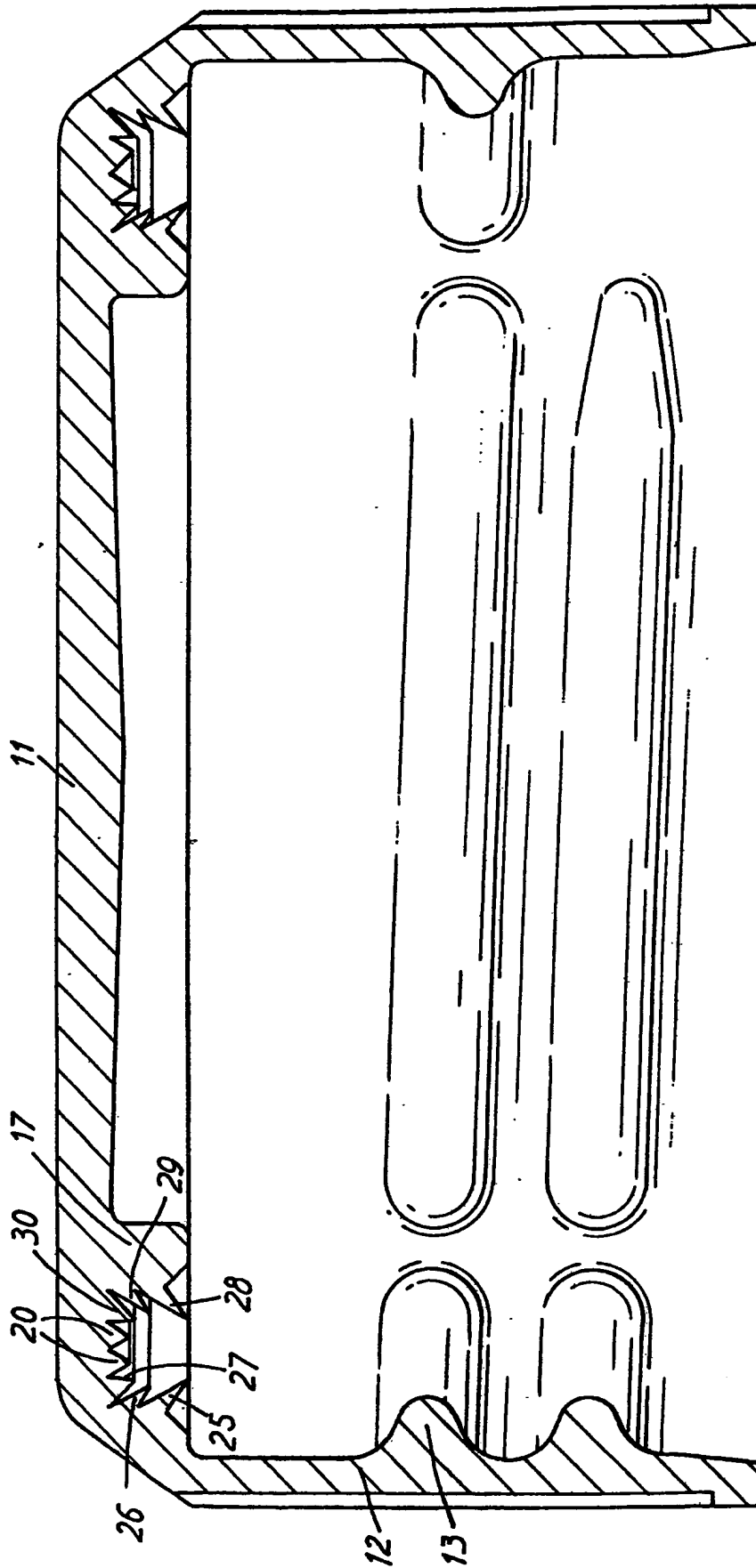


FIG. 2

## SPECIFICATION

## Improvements relating to closures

This invention relates to closures.

According to the invention there is provided a  
5 closure for application to the externally threaded  
neck of a container, which closure is moulded in  
one piece from a plastics material and comprises  
a top and a depending skirt having an internal  
screw-thread, a first annular sealing rib extending  
10 radially inwardly from the internal surface of the  
skirt at a location above the screw thereof and  
spaced below the top of the closure, and a radially  
outwardly directed second annular sealing rib  
depending from the underside of the top, so as  
15 with the top and skirt to form an annular channel  
for accommodating the top edge portion of the  
neck of the container and forming a seal by  
engagement of the first and/or second sealing rib  
with said top edge portion, the top of the closure  
20 being formed with one or more further annular  
sealing ribs projecting downward into the channel  
to form a seal with the top edge of the neck  
portion of the container.

The invention will now be described in more  
25 detail with reference to the accompanying  
drawings in which:

Figure 1 shows a first embodiment of the  
invention in axial section, and

30 Figure 2 shows a second embodiment of the  
invention in axial section.

Referring to Figure 1 a closure 10 is moulded in  
one piece from a resilient plastics material. The  
closure is designed to provide a seal for a bottle  
containing a beverage under pressure i.e. a  
35 carbonated pressure and to be re-usable to re-  
seal the bottle after part of its contents have been  
removed. The closure has a top 11 and a skirt 12  
which is internally screw-threaded, and externally  
knurled for improvement manual grip. Above its  
40 screw-thread ridge 13 and adjacent the top the  
skirt has an internal radially-inwardly projecting  
sealing rib 14 the tip 15 of which extends inward  
to a greater extent than the screw-thread ridge 13.  
The tip 15 of the rib is in this instance radiussed.

45 Spaced radially inwardly from rib 14 the top 11  
has a downwardly and outwardly extending rib 17  
the tip 18 of which is radiussed and projects  
towards rib 14. The ribs 14, 17 and the top  
together define an annular channel 19 to receive  
50 and form a seal with the top edge portions of the  
neck of the bottle, and the top 11 has in the  
channel two triangular section sealing ribs 20 for  
engaging the end face of the neck of the bottle.

In use of the closure, the end portion of the  
55 neck of the bottle is forced into the channel as the  
closure is screwed home so that the sealing ribs  
14 and 17 can engage external and internal

surfaces respectively of the neck to form a seal  
and so that the ribs 20 come into sealing

60 engagement with the top end of the neck. The  
positions of and spacing between the ribs 14 and  
17 are preferably determined in accordance with  
the tolerances on the neck size of the bottle. For  
example the tolerance on the neck diameter of a  
65 glass bottle is based on the outside diameter, and  
it is arranged that when the neck diameter is on  
the upper limit the outer rib 14 is in full sealing  
engagement with the neck and on the lower limit,  
a rib 14 is in light sealing contact with the neck.  
70 The internal diameter of the neck is not the  
subject of tolerance but tends to be a pre-  
determined amount less than the outside  
diameter and in consequence, the sealing  
pressure between the inner rib 17 and the internal  
75 surface of the neck tends to vary inversely as the  
pressure of rib 14 on the neck, so that a lighter  
sealing pressure by one of ribs 14, 17 is  
compensated by a heavier pressure by the other  
rib.

80 In a variant illustrated in Figure 2 of the  
drawings, rib 14 is replaced by two triangular ribs  
25, 26 which are disposed in series and which are  
undercut at their sides remote from the top 11,  
and an additional similarly undercut triangular rib  
85 27 is disposed so as for sealing engagement with  
the radiussed outer corner portion of the neck of  
the bottle. Rib 17 is replaced by triangular ribs 28,  
29 which are undercut at their sides remote from  
the top 11, and an additional similarly undercut  
90 rib 30 is disposed for sealing engagement with  
the radiussed inner corner portion of the neck.  
The sealing apices of these ribs may have an  
included angle of 30°.

## Claims (filed on 28/10/83)

95 1. A closure for application to the externally  
threaded neck of a container, which closure is  
moulded in one piece from a resilient plastics  
material and comprises a top and a depending  
skirt having an internal screw-thread, a first  
100 annular sealing rib extending radially inwardly  
from the internal surface of the skirt at a location  
above the screw-thread thereof and spaced below  
the top of the closure, and a radially outwardly  
directed second annular sealing rib connected to  
105 the top, so as with the top and skirt to form an  
annular channel for accommodating the top  
portion of the neck of the container and forming a  
seal by engagement of the first and/or second  
sealing rib with the radially outer and/or radially  
110 inner surfaces respectively of said top portion of  
the neck, the top of the closure being formed with  
one or more further annular sealing ribs projecting  
downward into the channel to form a seal with  
the top of the neck of the container.